

actionair

AirShield



**Aerofoil Air Control, Aeroseal Air Control
and Shut-off Dampers**

AirShield Control and Shut Off Dampers

The Range

The AirShield range of quality engineered dampers are suitable for air conditioning and ventilation systems requiring air control and low closed blade leakage characteristics. For standard low/medium pressure and velocity systems.

These aerodynamic precise movement opposed blade dampers can be either factory fitted with manual, electric or pneumatic controls and can be supplied in a flanged or spigotted casing. (Motorised option on Aerofoil only)

Application Parameters

AirShield Dampers to maximum width and height dimensions (see page 4) can be used where the operating total system pressure is up to 1000 Pascals and duct velocities to 12m/second.

Actionair AirShield Dampers are designed for applications in normal dry filtered air systems. When required for modulating function, or if exposed to fresh air intakes and/or inclement conditions, the dampers should be subject to a planned inspection programme.

Any application involving corrosive and/or aggressive hostile environmental conditions (e.g. swimming pools) may invalidate our warranty and should be referred to Actionair Sales Office.

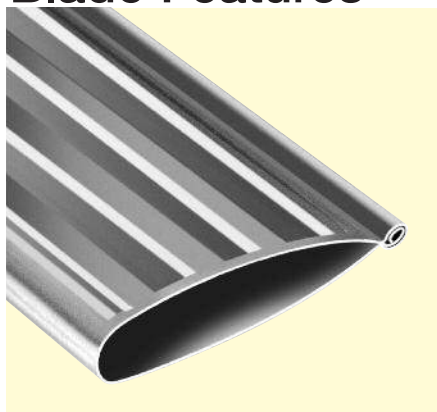


Aerofoil Air Control Damper



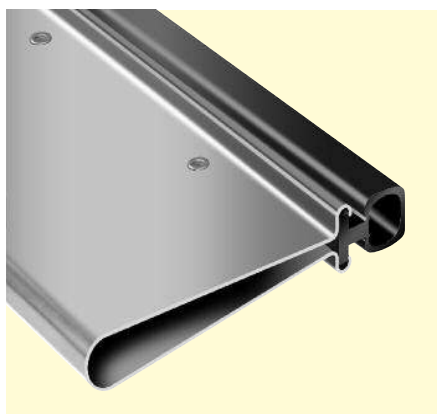
Aerofoil Air Control and Shut-Off Damper

Blade Features



Series Aerofoil

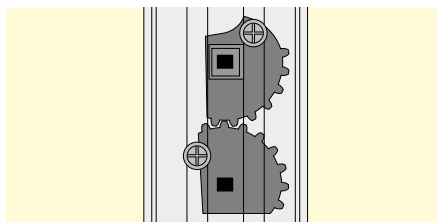
Series Aerofoil for system air balancing having aerodynamic ribbed double skin type 1.4016 (430) Ferritic Stainless Steel 50mm wide x 0.4mm thick blades. Housed within a galvanised mild steel flanged or galvanised spigotted casing being suitable for systems with a temperature range of -20°C through to $+70^{\circ}\text{C}$.



Series Aerofoil

Series Aerofoil for system air balancing and shut-off having aerodynamic double skin type 1.4016 (430) Ferritic Stainless Steel 50mm wide x 0.4mm thick blades with synthetic trailing edge blade seals and Stainless Steel side seals. Housed within a galvanised mild steel flanged or galvanised spigotted casing being suitable for systems with a temperature range of 0°C through to $+70^{\circ}\text{C}$.

Optional Blade construction type 1.4401 (316) Austenitic Stainless Steel.



Blade Drive Mechanism

The totally enclosed, precise movement, opposed blade cap and bar drive mechanism positioned out of the airstream for protection against damage is hard wearing and free running.

Casing Features

The damper casing having a single penetration for the drive control shaft making these dampers suitable for inclusion into air distribution systems of Class A and B of Eurovent Document 2/2 and Test Procedures for Classes A, B, and C (up to 1000 Pa) of HVCA Ductwork Specification DW144.

Flanged

A 1.5mm thick galvanised mild steel casing having peripheral flanges with pre-punched elongated corner holes to suit proprietary duct flanges.

Stainless Steel Options

See Dimensional Data and refer to Actionair Sales Office – Available on Aerofoil only.

Spigotted

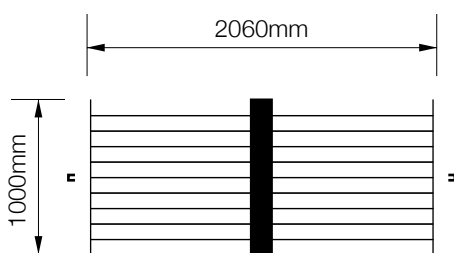
Consists of Flanged Casing above with 0.9mm minimum thickness spigots on both sides.

Stainless Steel Options

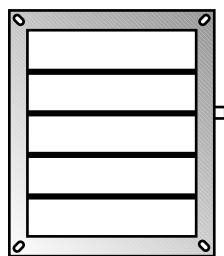
See Dimensional Data and refer to Actionair Sales Office – Available on Aerofoil only.

Please Note: AirShield, Aerofoil and Aerofoil dampers are only available in widths and heights up to 1000mm, please refer to page 4 for full sizing parameters.

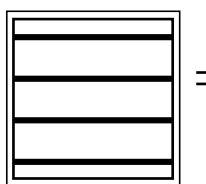
Multiple Assemblies



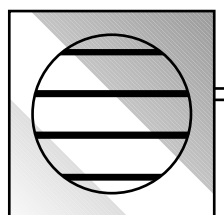
For flanged damper arrangements with dimensions in excess of 1000mm wide, the ES35 or ES36 will always be offered, (please refer to the Actionair brochure ES Heavy Duty Air Control and Shut-off Dampers). However, should individual AirShield dampers be preferred (due to damper depth limitations etc.), i.e. arranged side by side having 2-drives, ensuring that adequate space is allowed for access / fitting to each drive arrangement. They can be supplied up to 2060mm wide, by specific written instruction from customer at the time of Enquiry / Quotation / Order only.



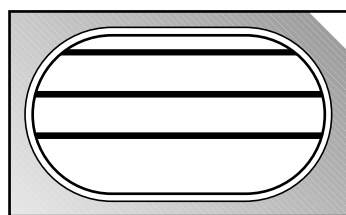
Type FLA
Square/Rectangular



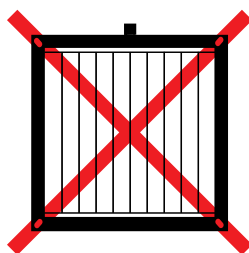
Type SPG
Square/Rectangular



Type SPG Circular



Type SPG Flat Oval



Please note: Aerofoil and Aerofoil dampers must not be installed with blades running vertical.

Weights

AirShield Aerofoil and Aerofoil Approximate Weights (Kg)

SQUARE/ CIRCULAR DUCT SIZE	TYPE FLA RECT.	TYPE SPG RECT.	TYPE SPG CIRCULAR
100	1.5	1.8	2.1
150	2.0	2.4	2.9
200	2.5	3.1	3.8
250	3.1	3.8	4.7
300	3.8	4.6	5.8
350	4.5	5.4	6.9
400	5.2	6.3	8.0
450	5.8	7.0	9.0
500	6.6	7.9	10.3
550	7.5	9.0	11.6
600	8.4	10.0	13.0
650	9.3	11.0	14.4
700	10.0	11.9	15.7
750	11.3	13.3	17.5
800	12.4	14.5	19.2
850	13.3	15.6	20.7
900	14.7	17.1	22.7
950	15.7	18.2	24.3
1000	16.8	19.4	26.1

For Type SPG Flat Oval weights please contact Actionair Sales Office.

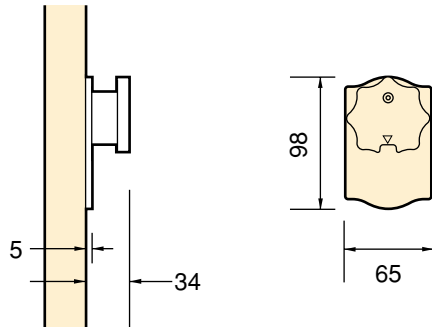
Control Options

Manual Control (Option M)

Always fitted as standard on Series Aerofoil units. Not suitable for Series Aerofoil or any Stainless Steel options.

Type FLA/SPG

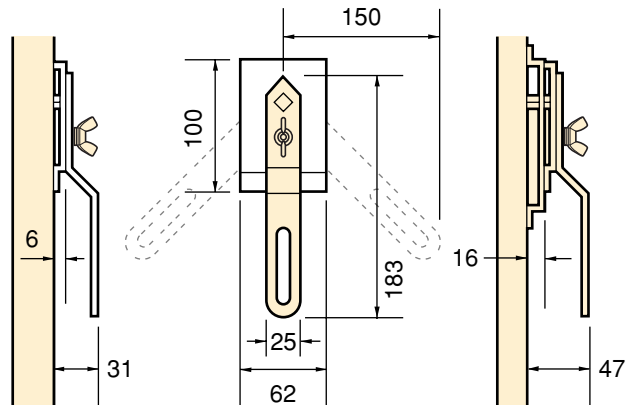
Consists of a red knob and slimline control box with blade position locking facility (a no. 6 pk screw supplied and fitted by others pierces through membrane in the control box) and visual blade position indication.



Manual Quadrant Control (Option Q)

Type FLA/SPG

Consists of a dark brown steel handle, blade position locking facility and quadrant bracket with visual position indication.

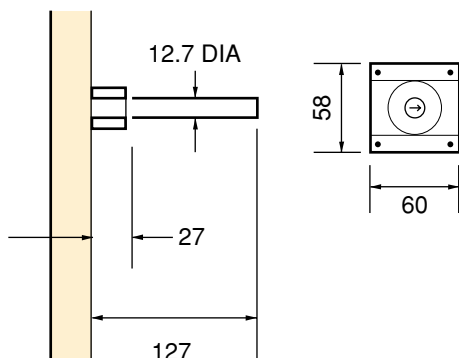


Type SPG Stainless Steel

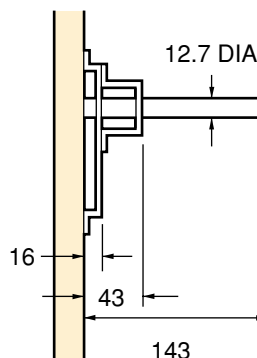
Extended Shaft Control (Option X) (Aerofoil only)

Type FLA/SPG

A solid 12.7mm diameter stainless steel shaft marked to provide visual blade indication complete with support bracket for attachment of couplings and/or linkages for motorisation by others. (Shaft rotates clockwise to close damper).



Type SPG Stainless Steel



Technical Data

(Aerofoil only)

Pneumatic Controls (Option E)

Factory fitted Hytork Pneumatic Actuators are available in on/off and spring return versions.

Factory fitted Controls will be selected to suit the torque requirements of the dampers.

Please refer to Actionair Sales Office if you require any further information.



(Aerofoil only)

Electrical Controls (Option E)

Factory fitted Belimo Actuators for 24V or 230V open/closed or spring return operation and 24V modulating are available. These will comply with EMC Directive 2004/108/EC.



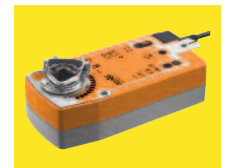
5 Nm LM-A



10 Nm NM-A



20 Nm SM-A



10Nm NF



20Nm SF

Specification

AirShield Aerofoil

Air control and system balancing dampers comprising of 50mm ribbed stainless steel aerodynamic blades with synthetic blade end bearings.

Housed in either a galvanised mild steel frame having integral peripheral flanges, with prepunched corner holes to suit proprietary duct flanges (Type FLA) or with spigot plates on both

sides, for square, rectangular, circular or flat oval connections (Type SPG).

The totally enclosed precise movement opposed blade mechanism positioned out of the airstream for protection against damage is hard wearing and free running. AirShield Aerofoil as supplied by Actionair.

AirShield Aeroseal

Air control and system balancing shut-off dampers comprising of 50mm stainless steel aerodynamic blades with synthetic trailing edge blade seals, synthetic blade end bearings and stainless steel top and side spring tempered flexible gasketing.

Dampers to have a maximum closed blade leakage of 27 l/s at 1000 Pa when measured on a 1000mm wide x 1000mm high damper.

Housed in either a galvanised mild steel frame having integral peripheral flanges, with prepunched corner holes to suit proprietary duct flanges (Type FLA) or with spigot plates on both sides, for square, rectangular, circular or flat oval connections (Type SPG).

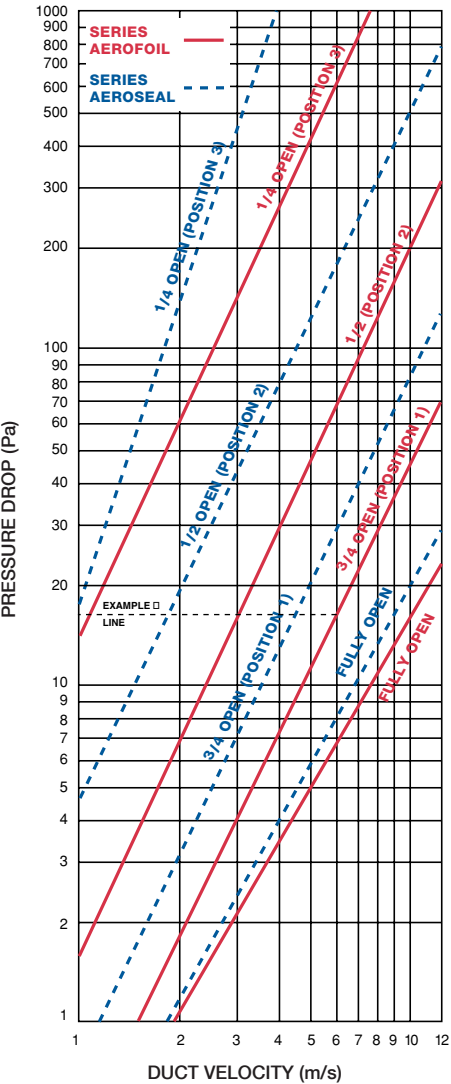
The totally enclosed precise movement opposed blade drive mechanism positioned out of the airstream for protection against damage is hard wearing and free running.

AirShield Aeroseal as supplied by Actionair.

Technical Data

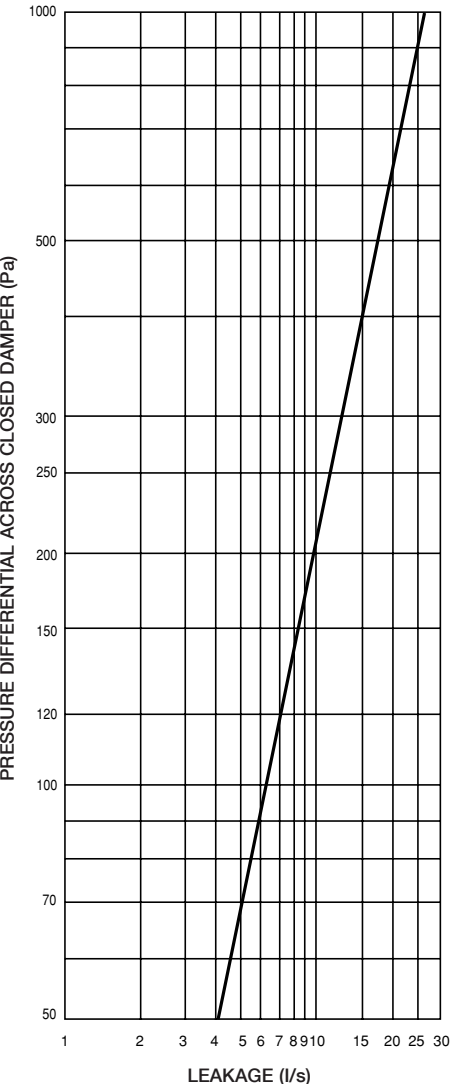
Pressure Drop Vs Velocity

Positions 1, 2 and 3 are blade positions as indicated on dampers fitted with Manual Control or Manual Quadrant Control.



AeroSeal Damper Leakage

AirShield Series AeroSeal closed blade leakage 1000mm wide x 1000mm high Damper.



AirShield

Aerofoil dampers are supplied fitted as standard with type Manual Control (Option M).

AeroSeal dampers are supplied fitted as standard with type Manual Quadrant Control (Option Q).

AeroSeal Stainless Steel dampers are supplied with type Manual Quadrant Control (Option Q) fitted as standard.

AirShield dampers can be factory fitted with one of the alternative control options as detailed on page 5 (AeroSeal and Stainless Steel dampers not suitable for Option M).

Maintenance








The Actionair range of AirShield Dampers are designed for applications in normal dry filtered air systems and should be subjected to a planned inspection programme, with cleaning and light oil lubrication in accordance with good industry practice. When exposed to fresh air intakes and/or inclement conditions this may need to be performed more regularly based on experience gained from previous inspections.

Selection

Please refer to individual sections of the brochure for specific product detailed information.

	Aerofoil	Aeroseal
Flanged Casing Minimum 100 x 100 (Height increments of 50mm)	■	■
Flanged Casing Maximum 1000 x 1000	■	■
30mm Flange Galvanised. 40mm Flange Stainless Steel	■	■
Flanged Casing Depth 65mm Galvanised. 150mm Stainless Steel	■	■
Spigotted Casing Minimum 100 x 100, Maximum 1000 x 1000	■	■
Circular Option Minimum 100 diameter, Maximum 1000 diameter	■	■
Flat Oval Option Minimum 300 x 100, Maximum 1000 x 550	■	■
Air Balancing	■	■
Shutoff Function	N/A	■
Opposed Blade Movement	■	■
Manual Control Option M (Standard for Aerofoil)	■	N/A (Not Stainless Steel)
Manual Quadrant Control Option Q (Standard for Aeroseal)	■	■
Extended Spindle Control	N/A	■
Electrical Control (Optional)	N/A	■
Blade Drive Mechanism mounted out of the airstream	■	■
Casing Leakage Conforms to DW144 Class C up to 1000Pa	■	■
Galvanised Case with 430 Stainless Steel Blades (Standard)	■	■
Stainless Steel Options 430 and 316 available (Aeroseal only)	N/A	■

Electrical Controls (Option E)

Area m ²	Dia mm	Open/Close or Modulating			Spring Return	
						
RECTANGULAR / FLOV	CIRCULAR	5 Nm LMA	10 Nm NMA	20 Nm SMA	10Nm NF	20Nm SF
Airshield Aeroseal						
Up to 0.09 M ²	Up to 300mm Dia	■			■	
Up to 0.10 M ²	Up to 315mm Dia	■			■	
Up to 0.30 M ²	Up to 550mm Dia		■		■	
Above 0.30 M ²	Above 550mm Dia			■		■

Due to a policy of continuous product development the specification and details contained herein are subject to alteration without prior notice.

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